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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,542	10/05/2001	Raymond M. Li	SJ09-2001-0095	4425

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INTERNATIONAL BUSINESS MACHINES CORPORATION
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INTELLECTUAL PROPERTY LAW
SAN JOSE, CA 95193-0001

EXAMINER	
LIN, KELVIN Y	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/972,542	LI ET AL.	
	Examiner	Art Unit	
	Kelvin Lin	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/29/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-23 are rejected under 35 USC 102(e) as being anticipated by Axberg et al., (U.S. PG Pub. 2003/0149769).

3. Regarding claim 1, Axberg teaches a digital data processing apparatus for managing a storage area network (SAN), the improvement comprising:

- a first queue of one or more tasks (Axberg, [0032], l.5-6),
- a second queue of one or more data that correspond to each of the respective tasks, the data being grouped in the second queue in accord with the task to which they correspond (Axberg, [0032], l.6),
- a manager service, coupled to at least the first queue, that updates an internal representation of the SAN by executing the tasks in the first queue one at a time, each task executing using data of the second queue that correspond to that task (Axberg, [0032], l.9-13).

4. Regarding claim 2, Axberg further discloses a digital data processing apparatus of claim 1, the improvement wherein the tasks are object oriented programming (OOP) objects. (Axberg, [0034], l.7-8).

5. Regarding claim 3, Axberg further discloses a digital data processing apparatus of claim 1, the improvement wherein the manager service executes the tasks atomically (Axberg, [0032], l.9-13).

6. Regarding claim 4, Axberg further discloses a digital data processing apparatus of claim 3, the improvement wherein each task processes sequentially data from the second queue that correspond to that task (Axberg, [0032], l.6-9).

7. Regarding claim 5, Axberg further discloses a digital data processing apparatus of claim 1, the improvement wherein the internal representation represents a topology of the SAN (Axberg, [0032], l.3-4).

8. Regarding claim 6, Axberg further discloses a digital data processing apparatus of claim 1, the improvement comprising a detection service in communication coupling with the manager service that generates the data in response to changes in the SAN (Axberg, [0034], l.3-5, l.8-10).

9. Regarding claim 7, Axberg further discloses a digital data processing apparatus of claim 6, the improvement wherein the data are notifications (Axberg, Abstract, l.4-11),

10. Regarding claim 8, Axberg further discloses a digital data processing apparatus of claim 6, the improvement wherein the manager service selectively adds tasks

and data to the first queue and to the second queue, selectively and respectively, in response to data generated by the detection service (Axberg, [0033], [0034], [0038], l.7-11).

11. Regarding claim 9, Axberg further discloses a digital data processing apparatus of claim 8, the improvement wherein the manager service sequentially adds data generated by the detection service to the second queue until generation of selected data (Axberg, [0034], l.3-4).

12. Regarding claim 10, Axberg further discloses a digital data processing apparatus of claim 9, the improvement wherein the manager service responds to the selected data by generating a task for updating the internal representation of the SAN (Axberg, [0034], l.6-10).

13. Regarding claim 11, Axberg further discloses a digital data processing apparatus of claim 9, the improvement wherein the manager service responds to a selected operator request by generating a task for updating the internal representation of the SAN (Axberg, [0032], l.9-13).

14. Regarding claim 12, Axberg further discloses a digital data processing apparatus for managing a storage area network (SAN), the improvement comprising:

- a detection service that generates notifications of changes in the SAN (Axberg, [0033], l.3-4),
- a manager service, in communication coupling with the detection service, that sequentially queues selected ones of the notifications to a notification queue and that responds to one or more selected

notifications by queuing a task to a task queue (Axberg, [0033], l.9-18, [0366], [0367])

- the manager service updating an internal representation of the SAN by executing tasks in the task queue one at a time, each task executing with one or more notifications from the notification queue that correspond to the same change in the SAN (Axberg, [0366]).

15. Regarding claim 13, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein each task executes with one or more notifications from the notification queue that were generated prior to the selected notification corresponding to the same change in the SAN (Axberg, [0035]).

16. Regarding claim 14, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein the notifications in the notification queue are grouped in accord with the change in the SAN with which they correspond (Axberg, [0032], l.8-9).

17. Regarding claim 15, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein the manager service executes the tasks atomically and wherein each task processes the notifications from the notification queue sequentially (Axberg, [0032], l.9-13).

18. Regarding claim 16, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein the manager service responds to a selected operator request by generating a task for updating the internal representation of the SAN (Axberg, [0037], l.7-10).

19. Regarding claim 17, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein, the notifications include one or more of a new component notification, a modified attribute notification, a missing component notification, and a missing relationship notification (Axberg, [0033], l.14-18).

20. Regarding claim 18, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein the service manager executes tasks from the task queue on a first-in-first-out (FIFO) basis (Axberg, [0035], l.3).

21. Regarding claim 19, Axberg further discloses a digital data processing apparatus of claim 12, the improvement wherein the service manager executes tasks from the task queue on a basis of priority (Axberg, [0035], l.4-5).

22. Regarding claim 19, Axberg further discloses a digital data processing apparatus for managing a storage area network (SAN), the improvement comprising:

- one or more scan elements, each of which is coupled to one or more components of the SAN and which identifies attributes with respect thereto (Axberg, [0033], l.8-13),
- a detection service in communication coupling with the scan elements that determines from the identified attributes changes in the SAN and generates one or more of notifications corresponding to each change (Axberg, [0033], l.14-15),
- a manager service, in communication coupling with the detection service, that sequentially queues selected ones of the notifications

to a notification queue and that responds to one or more selected notifications by queuing a task to a task queue (Axberg, [0033], l.9-18, [0366], [0367]),

- the manager service updating an internal representation of the SAN by executing tasks in the task queue one at a time, each task executing with one or more notifications from the notification queue that correspond to the same change in the SAN (Axberg, [0366]).

23. Regarding claim 21, Axberg further discloses a digital data processing apparatus of claim 20, the improvement wherein the detection service compares attributes identified by a scan element with attributes previously identified by the scan element to determine whether there has been a change in the SAN (Axberg, [0033], l.9-10).

24. Regarding claim 22 has similar limitations as claim 20. Therefore, claim 22 is rejected for the same reasons set forth in the rejection of claim 20.

25. Regarding claim 23, Axberg further discloses a storage area network, comprising:

- one or more hosts connected to one or more storage devices (Axberg, [0033], l.7-8),
- one or more agents each associated with one of the hosts, each agent monitoring topology of the SAN, the agents identifying attributes of any of (i) the host with which it is associated, (ii) the

interconnect to which that host is coupled, and (iii) storage units to which that host is coupled (Axberg, [0033]),

- a manager service in communication coupling with the agents, the manager service comprising:
  - a discover module that identifies changes in the SAN based on attributes identified by the agents and generates one or more notification corresponding to each such change (Axberg, [0033], l.9),
  - a service module in communication with the discover module that receives the events and the event notifications from the discover module (Axberg, [0033], l.11-13),
  - the service module generating a first queue having entries representing notifications received from the discover engine and a second queue representing tasks for updating an internal representation of the database (Axberg, [0032], l.5-6),
  - the service module sequentially processing entries in the second queue and, with each, one or more entries from the first queue representing notifications corresponding to the same change (Axberg, [0033], l.9-18, [0366], l.7-8).

Conclusion

The prior art made of record and not relied upon is considered pertinent to application's disclosure.

- Beser N., (Patent No. 6189102) Method For Authentication Of Network Devices In A Data-Over Cable System.
- Starr et al. (Patent No. 6807581) Intelligent Network Storage Interface System.
- Podavano M., (Patent No. 6606690) System And Method For Accessing A Storage Area Network As Network Attached Storage.
- IEEE – Gokhale A., Principals for Optimizing CORBA Internet Inter-ORB Protocol Performance, System Science, 1998, Proceedings of the Thirty-First Hawaii International Conference on, vol. 7, Jan. 6-9, 1998, pp. 376-385.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Lin whose telephone number is 571-272-3898. The examiner can normally be reached on Flexible 4/9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on 571-272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/20/04
KYL

JACK D. HARVEY
SUPERVISORY PATENT EXAMINER